

# Investigating the effects of reward on speech perception and the pupil dilation response in adults with and without hearing loss

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In this project, we will investigate the effect of motivation, as manipulated by the level of (monetary) reward, on listening effort (as measured with the pupil dilation response) and performance, while listening to speech in different types of...

<b>Ethical review</b>	Approved WMO
<b>Status</b>	Recruitment stopped
<b>Health condition type</b>	Hearing disorders
<b>Study type</b>	Observational non invasive

## Summary

### ID

NL-OMON43070

### Source

ToetsingOnline

### Brief title

The effects of reward on speech perception

### Condition

- Hearing disorders

### Synonym

hearing loss, hearingdamage

### Research involving

Human

### Sponsors and support

**Primary sponsor:** Vrije Universiteit Medisch Centrum

**Source(s) of monetary or material Support:** Oticon Foundation

## Intervention

**Keyword:** Listening effort, Reward, Speech perception

## Outcome measures

### Primary outcome

This study's main parameters are SRT scores and pupil diameter. We want to investigate how these are affected by motivation and hearing-loss. Motivation will be manipulated by means of monetary reward within subject and hearing-loss is a between subject factor.

### Secondary outcome

Not applicable

## Study description

### Background summary

The amount of effort we spend in adverse listening conditions seems to depend on our motivation to achieve our goal of listening. The main aim of this project is to provide insight on the impact of reward (motivation) on speech perception and listening effort in adults with and without hearing loss. We hypothesize that hearing loss has an impact on both motivation and cognitive ability/resources and therefore the amount of effort invested.

### Study objective

In this project, we will investigate the effect of motivation, as manipulated by the level of (monetary) reward, on listening effort (as measured with the pupil dilation response) and performance, while listening to speech in different types of background noise. Additionally, we will investigate how motivation and effort are affected by hearing-loss and hearing aid use.

### Study design

In separate studies the effect of motivation on speech processing in different

kind of listening situations, varying in relative loudness of background noise and noise type, will be investigated. Additionally, the effect of hearing loss on motivation during speech processing in adverse listening conditions will be investigated.

### **Study burden and risks**

This research is without any risk or burden for the participants. Participants will perform one 1-2 hour session, which involves a number psychophysical tests and the filling in of some questionnaires.

## **Contacts**

### **Public**

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## **Trial sites**

### **Listed location countries**

Netherlands

## **Eligibility criteria**

### **Age**

Adults (18-64 years)

Elderly (65 years and older)

## Inclusion criteria

Must be able to give informed consent.

Dutch as native language.

Normal or corrected-to-normal vision.

## Exclusion criteria

Younger than 18 years or older than 70 years.

Additional serious conditions.

Diabetes, because of its effect on the pupil response.

More than 20 dB hearing-loss for normal hearing.

More than 70 dB hearing-loss for hearing-impaired individuals for each ear averaged over octave frequencies 1-4 KHz for hearing-impaired individuals.

## Study design

### Design

Study type:	Observational non invasive
Intervention model:	Other
Allocation:	Non-randomized controlled trial
Masking:	Open (masking not used)
Control:	Active
Primary purpose:	Other

### Recruitment

NL	
Recruitment status:	Recruitment stopped
Start date (anticipated):	14-09-2017
Enrollment:	120
Type:	Actual

## Ethics review

Approved WMO  
Date: 21-12-2016  
Application type: First submission  
Review commission: METC Amsterdam UMC

## Study registrations

### Followed up by the following (possibly more current) registration

No registrations found.

### Other (possibly less up-to-date) registrations in this register

No registrations found.

### In other registers

Register	ID
CCMO	NL59680.029.16